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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/605,311	06/28/2000	Kevin J. Gallagher	0325.00379	6229
21363	7590	12/28/2004	EXAMINER	
CHRISTOPHER P. MAIORANA, P.C.			PEYTON, TAMMARA R	
24840 HARPER			ART UNIT	
ST. CLAIR SHORES, MI 48080			PAPER NUMBER	
			2182	
DATE MAILED: 12/28/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/605,311

Applicant(s)

GALLAGHER ET AL.

Examiner

Tammara R Peyton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6,7,9-16,19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 is/are allowed.
- 6) ☒ Claim(s) 1,6,7,9-16,19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s). _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6, 7, 9-16, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Abdi*, (US 5,155,386) and *Audy*, (US 5,225,811).

As per claims 1 and 13-16, *Abdi* teaches an apparatus comprising:

- a voltage generator (12+22, Fig.1 or 50/52 + 12, Fig. 3) configured in response to a feedback signal (output signal from comparator, 18, Figs.1,3) to (i) generate a reference output in reference to a plurality of reference voltage (v_{REF1} - 14, v_{REF2} -16) and (ii) switch between said plurality of reference voltages;
- a comparator circuit (18, Figs.1,3) configured to generate an output voltage (20, Figs.1,3) in response to a comparison between said reference output and unknown voltage (v_{IN} , 24, Figs.1,3), wherein said output voltage comprises accurately controlled hysteresis. (*Abdi*, Abstract, col. 2, lines 4-col. 5).

However, *Abdi* is silent in respect to generating a reference output voltage in response to a plurality of bandgap controlled reference voltages and hysteresis accurately controlled externally to said comparator circuit. However, *Audy* teaches in a preferred embodiment the voltage reference 2 is implemented as a bandgap voltage reference and a hysteresis-setting impedance circuit that is preferably implemented as a resistor R_h external to comparators C1 and C2. (*Audy*, Abstract, Fig. 3, col. 2, lines 15-col. 9) It would have been obvious to one of ordinary skill to implement *Audy* preferred embodiment with *Abdi*, because doing so would provide user-controlled hysteresis capability.

As per claims 6, 7, and 12, *Abdi* teaches a voltage generator circuit comprises a voltage supply circuit configured to generate said plurality of reference voltages and the voltage supply circuit varies said plurality of reference voltages to generate said output voltage. *Abdi* does not expressly teach of a bandgap reference circuit, however, one of ordinary skill in that art would readily recognize that the voltage supply circuit performs the same functions of a bandgap reference circuit. *Audy* specifically teaches the use of a bandgap reference circuit. Furthermore, one of ordinary skill would readily recognize that the bandgap reference circuit is configured to respond to voltage, process, and temperature variations.

As per claim 9, *Abdi-Audy* teaches wherein said voltage reference circuit comprises:

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a plurality of current sources configured to generate said plurality of reference voltages; and a plurality of resistors each coupled to at least one of said plurality of current sources.

As per claims 10 and 11, *Abdi-Audy* teaches wherein said reference switch circuit comprises:

a plurality of switches each (i) configured to receive at least one of said plurality of reference voltages and (ii) coupled to said reference output voltage, and wherein said plurality of switches are configured in response to said output voltage.

As per claims 19 and 20, one of ordinary skill would readily recognize that the voltage reference circuit is configured to respond to voltage, process, and temperature variations. Therefore, *Abdi-Audy* teaches summing a positive temperature coefficient and a negative temperature coefficient; and controlling a voltage level of said plurality of reference voltages.

Allowable Subject Matter

Claim 22 is allowed over prior art.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammara R Peyton whose telephone number is 703-306-5508. The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Gaffin can be reached on 703-308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7240 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Mailed responses to this action should be sent to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231.

Faxes for formal communications intended for entry should be sent to:

(703) 308-9051,

or, for informal or draft communications, to:

(703) 306-5404 (please label "PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to:

Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor

(Receptionist

A handwritten signature in black ink, appearing to read 'Tammara Peyton', with a long, sweeping horizontal stroke extending to the right.

Tammara Peyton

December 20, 2004